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MISCELLANEOUS NOTES ON LABIATAE

by

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The forthcoming publication of the Labiatae in the Prodromus of a Flora of South West Africa necessitates the publication of two new species as well as the recombination of some existing taxa of this family. All but two of the taxa in question belong to the much debated Coleus-Plectranthus group of genera, and in view of the work which is being carried out at present by the director of the National Herbarium of South Africa in Pretoria, Dr. L. B. Codd, I am more than reluctant in publishing the results of my own studies. I should at this point acknowledge the advice which was readily given to me by Dr. Codd during the course of last year.

The only comprehensive treatments of the African Labiatae are those by BAKER in Flora of Tropical Africa (Vol. V; 1899-1900) and N. E. BROWN, T. COOKE, and S. A. SKAN in Flora Capensis (Vol. V; 1910). For various reasons the treatment of this family in these major African floras is both completely out-of-date and inadequate in parts. This was also shown by I. K. MORTON (1962) when he published an investigation into the factors affecting the frequency of polyploidy in the floras of temperate and tropical regions and based his studies on the Labiatae. The taxonomic survey which he undertook in connection with this study resulted in a classification and taxonomic revaluation of some of the genera. Mostly affected by his changes was the Coleus-Plectranthus complex which presents one of the most difficult problems within the family.

The genus Coleus was created by LOUREIRO in order

to house all the species in which the stamens are united to a varying degree thus forming a kind of tube ensheathing the style. In contrast to this they are supposed to be free from each other in the genus Plectranthus. MORTON (p. 243) quite rightly points out that the use of this character is entirely arbitrary, and he emphazizes that in certain cases the degree of fusion is "sufficiently variable for different populations of the same species to be placed in different genera". Curiously enough this complete break-down of the characters, which distinguish the genera Coleus and Plectranthus, had already been pointed out by E. D. MERRILL (1937) who studied specimens of Coleus amboinicus which is, nota bene, the type species of that genus. Following these observations one can only agree with MORTON in reducing Coleus (1790) to Plectranthus (1788). It is very unfortunate that MORTON did not provide a clear and definite delimination of the genus Plectranthus since he confined his studies to west African species, and regarded the genus "for the moment to be a repository for Coleus- or Plectranthus- like species which cannot satisfactorily be placed in other genera". By implication in his key to the west African genera of the Plectranthus complex he defines the genus (based on calyx characters) as follows: "Calyx bilabiate ... upper tooth of calyx decurrent on the tube, broadly ovate but not exceeding the other teeth; inflorescence paniculate, if spicate then narrow or lax and without large bracts". This automatically excludes the type species of Coleus namely C. amboinicus (see also p. 298). L. E. CODD, who is aware of this dilemma, proposed (written communication) to uphold Coleus as a monotypic genus and distribute the many species which were included in it so far to the various seggregates of Plectranthus. If one examines Coleus amboinicus closely one finds that its unique character, that is its oblong upper tooth, is extremely variable, and in some forms it is hardly longer than in any other species of Plectranthus (see pl. 11 , fig. 5). Moreover it is often hardly possible to decide whether or not the superior tooth is decurrent on the calyx tube. On account of this I would find it extremely difficult to key out this taxon from Plectranthus. Therefore it seems desirable to enlarge the generic description of Plectranthus and include species in which the superior tooth of the calyx is both longer than the other teeth and not conspicuously decurrent on the tube.

Another segregate of Plectranthus is the genus Burnatastrum Briquet which is characterized by its calyx: the tube is conspicuously ventricose in the lower half and siphon-like above; the triangular calyx teeth are more or less equal in size as well as in shape. BRIQUET included three species in this genus namely B. spicatum, B. lavenduloides, and B. lanceolatum, all of which possess the above mentioned characters, and they also have an inflorescence consisting of paired cincinni. If one, however, looks at a wider range of African material the wisdom of trying to separate Burnatastrum from Plectranthus becomes doubtful. With regard to the calyx teeth there are to be found all intermediate stages ranging from all being equal to the development of a distinct superior tooth. A ventricose calyx tube is also to be found in certain species of Neomüllera as well as in species of Plectranthus sensu strenuo. Finally there is no strict correlation between these calyx characters and the occurrence of paired cincinni. Therefore I think it better, at least for the time being, to unite Burnatastrum with Plectranthus (see also p. 301).

Very closely related to this group is the genus Ascocarydion G. Taylor (plate III). The structure of the calyx in this genus is intermediate between Plectranthus sens. str. and Burnatastrum but it always displays a marked irregularity (see pl. III , fig. 4). In flower structure the genus is absolutely identical with Plectranthus. Thus the only difference between Ascocarydion and Plectranthus lies in the peculiarly flattened nucules (see plate III, figs. 5 - 6), which, although a distinctive character, hardly justifies the generic rank of this plant (see also p. 299). Some comment might be made at this point on Plectranthus amboinicus. My interest in this species was aroused by a specimen collected by B. de WINTER & LEISTNER in the Kaokoveld district of South West Africa in 1957. At first sight this plant (see plate II) appeared to be a new species without any close relationship to any of the other African members of the Coleus-Plectranthus complex. Only after prolonged study and lengthy discussions with Dr. D. ADAMS of Jamaica who has this plant in cultivation, did I come to the conclusion that it was a specimen of Plectranthus amboinicus. The synonymy of this species is as follows:

Plectranthus amboinicus (Lour.) Sprengel, Syst. Veg. 2: 690 (1825).

Coleus amboinicus Lour., Fl. Cochinch.: 372 (1790).

Coleus aromaticus Benth. in Wall., Plant. As. Rar. 2: 15 (1831) et in Bot. Reg. 18: tab. 1520 (1832).

Plectranthus aromaticus (Benth.) Roxb., Fl. Ind. ed. 2, 3: 22 (1832).

Coleus suganda Blanco, Fl. Filip.: 483 (1832).

Coleus amboinicus Lour. var. violaceus Gürke in Engl. Bot. Jahrb. 19: 210 (1894).

Majana amboinica (Lour.) O. Kuntze, Rev. Gen. Pl.: 524 (1891).

The typification of P. amboinicus poses a problem because LOUREIRO's specimen in the herbarium of the British Museum (Natural History) is virtually unidentifiable. It consists of a stem fragment and an almost pulverized inflorescence. Only from a few flower fragments some of the characteristic features of the species especially the elongated superior calyx tooth can be recognized. The illustration of "Marrubium album amboinicum" (Rumphius, Herb. Amb. 5: 294, pl. 102, fig. 2 (1747)), which is cited by LOUREIRO, is not conclusive at all. Since the species, as defined by most authors has never been confused with any other plant it should suffice to select a representative specimen: A. F. G. KERR s. n., Siam, Bai Hu Sûa, 25. V. 1924 (BM). One of the most remarkable features of Plectranthus amboinicus is that it has been spread by cultivation throughout the Old World tropics for centuries, and it was also introduced into South- and Central America at an unknown date, yet one was never sure of its country of origin. Because of its medicinal properties the plant is to be found in gardens all over the Far East. Its popularity as a spice can be deduced from vernacular names such as "Soup Mint", "French Thyme", "Spanish Thyme", "Country Borage" etc. According to Dr. ADAMS Jamaicans use it frequently for flavouring fish dishes, and BENTHAM records that the leaves were eaten with bread and butter. If not found in gardens the plant grows as a weed on rocky banks, on cliffs, along roads, and in similar habitats. The only specimens which I have seen from natural habitats are from Africa. In Kenya Plectranthus amboini-

cus is found growing in grassland near swamps; the South West African specimen occurs in open woodland. According to the field notes the aromatic roots of this plant are used by the ladies of that region as one of the ingredients of a pomade. Since the species has also been recorded from southern Angola (WELWITSCH 5556 and GOSSWEILER 4479 - both BM) it may be that southern tropical Africa is this plant's country of origin, from which it was perhaps distributed by the seafaring Portuguese to the East. Only further collecting in these regions can of course shed more light on this question.

To the excellent description of Plectranthus amboinicus which was given by E. MERRILL (loc. cit.) only some remarks on the variability of the plant need to be added. The leaf lamina varies from ovate to circular-flabellate; its base is truncate or more often cuneate but sometimes slightly cordate. Whereas the leaves of the South West African specimen (see pl. II) are subsessile, they can be rather long-petioled in specimens from other regions (up to 65 mm). The variability of the calyx has already been pointed out above. In the South West African plant the superior tooth (pl. II , figs. 4-5) is relatively short but definitely longer than the lateral ones; it usually becomes more prominent in fruit. The corolla is purple, lavender-blue, bluish pink, or bright pale lilac. In view of this wide colour range GÜRKE's variety "violaceus" can be discounted.

Plectranthus mirabilis (Briq.) Launert, comb. nov.

Coleus mirabilis Briq. in Engl. Bot. Jahrb. 19: 183 (1894).

Ascocarydion mirabile (Briq.) G. Taylor in Journ. Bot. 69, suppl. 2: 162 (1931).

Coleus leucophyllus Baker in Kew Bull. 1895: 292 (1895)

Syntypes: Angola, Malange distr., GOSSWEILER 1044 and 1046 (BM).

See also page 297 !

Plectranthus equisetiformis (E. A. Bruce) Launert, comb. nov.

Coleus equisetiformis E. A. Bruce in Kew Bull. 1935: 285 (1935).

Type: Tanzania, Kibariani Mts., B. D. BURTT 3892 (K).

For notes see under the following species!

Plectranthus candelabriformis Launert, spec.nov., (Pl. 1)

Herba perennis vel suffruticosa usque ad 100 cm alta amplissime ramosa; rami adscendentes quadrangulares virides longitudinaliter undique minute pubescentes vel hirsuti. Folia longe petiolata; lamina 6 - 15 x 3,5 - 8 (11) cm, ovate, apice subacuta vel subacuminata, marginibus grosse crenatis crenis cr. 2 mm altis et 5 - 8 mm distantibus, basi subcordata vel rotundata, utrinque sparse pilosa raro glabra; costis utroque latere 5 - 8; petiolus foliorum 2,3 - 6 cm longus, subcanaliculatus, hirsutus. Inflorescentiae terminales et laterales, paniculis numerosis usque ad 30 cm longis ambitu oblongis componentibus. Bracteae sessiles vel breve petiolatae, 5 - 10 (12) mm longae et usque ad 5 mm latae, lanceolatae, ovati-lanceolatae vel anguste ellipticae, apice subacutae, basi attenuatae. Flores terni apice ramulorum panicularum dispositi, horizontaliter patentes. Pedicelli 5 - 10 mm longi, teretes, graciles brevissime hispidi. Calyx sub anthesi 3 - 5 mm longus - maturus auctus usque ad 9 mm longus basi fortiter ventricosus -, tubus calycis campanulatus, ± 1,7 mm longus extus ± dense pilosus et glandulosus, dentibus subaequilongis, ± 3,2 mm longis, lanceolati-triangulatis vel triangulatis, acutis, ± dense brevissimeque hirsutis glandulisque. Corolla extus sparse pilosa, 6,5 - 7,5 mm longa, violacea; tubus 3 - 3,5 mm longus, basi ± 1,2 mm diametro, supra basim constrictus et itidem leviter geniculatus; labium suporum ambitu late ellipticum vel obovatum ± 4 mm altum, et ± 3,6 mm latum, leviter 3-lobatum, lobo medio ± 1,6 mm longo et ± 2,8 mm lato apice retuso, lobis lateralibus obtusis ± 2,5 mm longis et ± 0,4 mm latis, labium inferum e labro supero sinu brevi separatum, cymbiforme, ± 3,6 mm longum, suberectum. Genitalia normalia, in labro infero inclusa. Nuculae ± 1,6 x 1,2 mm, ambitu late ellipticae, sectione subrhombeae; testa glabra levisque, irregulariter grisei-bruneo variegata.

Distribution: Tanzania, Zambia, South West Africa.

Ecology: Growing in thickets, grassy depressions, in old cultivations on sandy soil, also along paths.

Material examined: South West Africa: Grootfontein district, 16 km east of Runtu, fl. & fr. 7. III. 1958, MERXMÜLLER & GIESS 1912 (M, holotype; BM, isotype). -- Zambia, Balovale, 25. II. 1964, FANSHAWE 8343 (K); Mpongwe, 30. III. 1964,

FANSHAWE 8405 (K); Machili, 16.IV.1961, FANSHAWE 6502 (K) and 13.II.1961 No. 6247 (K). -- Tanzania, Manyoni, 4450 ft., 24.IV.1962, POLHILL & PAULO 2154 (K).

Notes: This new species is closely related to Plectranthus equisetiformis. Both species are remarkably different from the rest of the genus on account of their peculiar inflorescence. But whereas the verticels are not peduncled and thus the flowers solitary on a long pedicel in P. equisetiformis they are always peduncled in the species in comparison, and the flowers are arranged in triads. The flowers of P. equisetiformis are much larger than in the new species. The corolla of the former species varies in length from 12 - 30 mm while it is hardly longer than 7 mm in the latter. In P. equisetiformis the calyx is much less ventricose than in P. candelabriformis, and it is slightly bilabiate with the superior tooth shorter as well as broader than the others. If a future revision of the Coleus - Plectranthus complex of species should justify the maintaining of the genus Burnatastrum this species may have to be transferred to it.

Plectranthus blumei (Benth.) Launert, comb. nov.

Coleus blumei Benth., Gen. et Spec. Labiat.: 56 (1832).

Plectranthus scutellarioides Blume, Bijdr. Fl. Ned. Ind.: 837 (1826) non R. Br. 1810.

Note: P. blumei is a well known ornamental plant. The new combination is made by request of Dr. D. ADAMS who needs it for his forthcoming book on the flora of Jamaica.

Stachys burchelliana Launert, nom. nov.

Stachys burchellii Benth., Gen. et Spec. Labiat.: 561 (1834) nom. illegit.

Phlomis micrantha Burch., Trav. Int. S. Afr. 1: 340 (1822).

Notes: BENTHAM's epithet "burchellii" is superfluous since Phlomis micrantha was included in synonymy. Because the epithet "micrantha" has been used later for a different species (Stachys micrantha Griseb. in Abh. Königl. Ges. Wiss. Göttingen 24: 275 (1879)) it cannot now be applied.

Hemizygia floccosa Launert, spec. nov.

Suffrutex ramosus usque ad 60 cm altus; rami foliosi primum obtuse quadrangulares et sulcati trichomibus ramosis obtecti vel glabrescentes, demum teretes glabrescentes et cortice lacerato griseo obtecti. Folia petiolata, 10 - 45 mm longa, 7 - 27 mm lata, herbacea, ovata vel ovati-oblonga vel anguste elliptica, basi cuneata, apice acuta vel subobtusa, marginibus crenatis, supra pubescentia, subtus dense pilis ramosis argenteis floccosa vel subtomentosa, undique sparse glandulosa. Petioli usque ad 20 mm longi, floccosi vel glabrescentes. Racemi simplices vel basin versus ramosi, 7 - 26 cm longi; rhachis obtuse quadrangulatus, pilosus glandulosusque; verticilli biflori dissiti; bracteae mox deciduae; pedicelli 2 - 6 mm longi, graciles, teretes, hisiduli, plusminusve glandulosi. Calyx extus pilis simplicibus sparse obtectus, glandulosus, sub anthesi 5 - 7 mm longus, post anthesis auctus, usque ad 10 mm longus, purpurascens, membranaceus; tubus primum campanulatus demum subcylindraceus, dente postica margine decurrente usque ad 3 mm longa et lata, dentibus anticis lateralibusque filiformibus, anticis 3 - 4 mm longis, lateralibus nonnumquam brevioribus. Corolla conspicua, usque ad 20 mm longa, aromatica, pallide violacea vel malvina, longitudinaliter purpureo-striata, utrinque glabra vel extus sparsissime pilosa; tubus late infundibuliformis, rectus, fauce oblique truncatus et lateraliter compressus; labium superum 4 - 6 mm longum, trilobatum, lobo medio plusminusve 5 mm longo et lato, apice obtuso, lobis lateralibus obtusis; labium inferum cr. 5 mm longum. Stamina ex corolla tubo 2 - 6 mm exserta; antica fauce corolla inserta, filamentis connatis. Stylus apice crassatus et bilobatus. Nuculae cr. 3,8 mm longae et 2 mm latae, ambitu late ellipticae, sectione ellipticae; testa glabra levisque, dilute fusca, nitidula.

Distribution: South West Africa. Not known from elsewhere.

Ecology: Growing on banks of watercourses, near waterfalls, or in seasonally dry reviers, on sandy soil or gravel, also between rocks.

Material examined: Outjo district: 36,1 miles west of Welwitschia, on road to Torra Bay, fl. 28. III. 1963, B. de WINTER & HARDY 8139 (PRE, holotype; BM, K, M, isotypes); near Bethanis (west of Welwitschia), 14. XI, 1961, GIESS 3929 (M; PRE); Twyfelfontein, 24. V. 1963, LEIPPERT in herb. VOLK s. n. (M). -- Kaokoveld: Table Mt. above the "Versteinerter Wald", 24. IV. 1954,

KRÄUSEL 629 (FR - not seen-; M); 40 miles N. W. of Sesfontein on path to Purros, 23. VI. 1960, GIESS 3215 (M); Grootberg, near the waterfall, 29. III. 1953, SCHWERDTFEGER in herb. WALTER 2/188 (M).

Notes: Amongst the species of the genus Hemizygia which possess a tomentum of either stellate or branched hairs H. obermeyerae as well as H. elliottii are, judged by their overall similarity, the nearest relatives of this new species. H. floccosa is distinguished by its large attractive flowers. In H. obermeyerae the verticels are 6-flowered, and the leaves are quite different in both shape and size. Moreover the tomentum of this species consists of much shorter stellate hairs. In H. elliottii the leaf margins are almost always entire, the tomentum is rather dense and consists of short stellate hairs. The petioles are much longer in the new species than in H. elliottii. Rather similar in habit is H. welwitschii from southern Angola but this plant differs from the South West African species by having 6-flowered verticels and much smaller flowers; the indument of the leaves consists of simple hairs.

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Plate I: Plectranthus candelabriformis

1) Upper part of plant showing inflorescence (x 1/2); 2) basal leaf (x 1/2); 3a) section of leaf (inferior surface) showing distribution of hairs and sessile glands (x 4); 3b) hair (x 24); 4) flower (x 4); 5) calyx (x 8); 6) longitudinal section of flower (x 6); 7) base of style showing young nucules (x 12); 8) mature nucule (x 12).
1 - 2 taken from POLHILL & PAULO 2154, 3 - 8 taken from MERXMÜLLER & GIESS 1912.

Plate II: Plectranthus amboinicus

1) Habit (x 1/3); 2) part of inferior surface of leaf showing venation and indument (x 4); 3) individual hair of leaf (x 24); 4) flower (x 3); 5) calyx (x 6); 6) longitudinal section of corolla (x 3); 7) base of style showing young nucules (x 12).
All taken from B. de WINTER & LEISTNER 5595.

Plate III: Plectranthus mirabilis

1) Part of stem and inflorescence (x 1/2); 2) flower (x 1 1/2); 3) longitudinal section of flower (x 1 1/2); 4) calyx in fruit (x 11/2); 5) nucule (x 3); 6) nucule in transverse section (x 3).
All taken from GOSSWEILER 1044.

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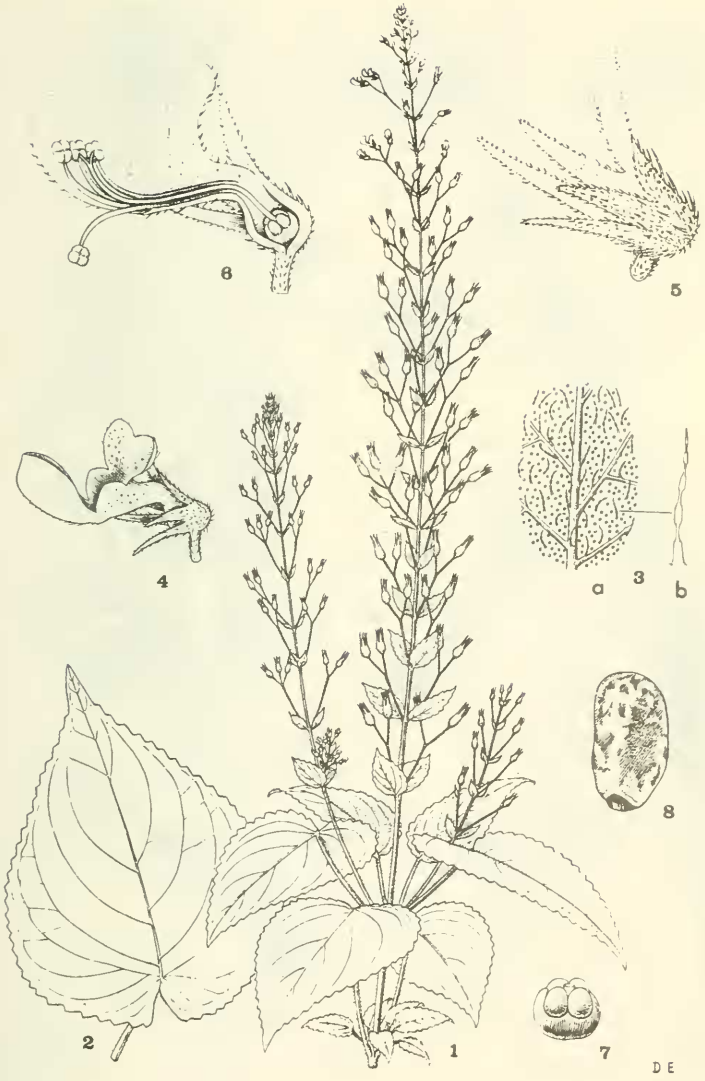

Plate I

Plate II

Plate III